

REMARKS

By the subject Amendment, Applicants have amended Claims 1, 7, 10 through 14, 21, 24 and 25 and cancelled Claims 8, 9, 19 and 20 without prejudice. Accordingly, Claims 1 through 7, 10 through 18 and 21 through 26 are presently pending herein. Claims 1, 10, 21 and 25 are presented in independent form.

The Official Action dated September 21, 2005, objected to Claims 7 and 24 due to misspellings. Applicants have amended these claims to overcome the Examiner's objections. However, it will be readily appreciated that the scope of these claims has not been changed.

The Official Action further rejected Claims 1 through 26 under 35 USC § 102 as allegedly being anticipated by Carson (i.e., U.S. Patent No. 4,197,868). Applicants respectfully traverse these grounds of rejection.

“Anticipation...requires that the *identical invention that is claimed* was previously known to others and thus is not new...*When more than one reference is required to establish unpatentability of the claimed invention anticipation under § 102 can not be found*, and validity is determined in terms of § 103.” *Continental Can v. Monsanto*, 948 F.2d 1264, 1267 (Fed. Cir. 1991)(emphasis added). “A patent is invalid for anticipation *when the same device or method, having all the elements and limitations contained in the claims*, is described in a single prior art reference.” *ATD Corporation v. Lydall, Inc.*, 159 F.3d 534, 545 (Fed. Cir. 1998)(emphasis added). See also *Crown Operations International, Ltd. v. Krone*, 289 F.3d 1367, 1375 (Fed. Cir. 2002)

When evaluated under this legal standard, the Examiner’s rejection of Claims 1 to 26 cannot be sustained.

Applicant's invention, as recited in Claim 1, is directed to an apparatus to control the rate of flow of a stream of pressurized fluid through a conduit. The apparatus includes a flow measurement device for generating an output signal proportionate to the rate of flow of the fluid therethrough. The apparatus further includes *a flow control device operatively connected to the conduit downstream of said flow measurement device*. The flow control device includes an adjustable orifice wherein upon the opening of the orifice a portion of the stream of pressurized fluid is independently released from the conduit by the flow control device. A controller is operatively connected to the flow control device for receiving the output signal generated by the flow measurement device and for causing the adjustable orifice in the flow control device to open or close as necessary to maintain the flow of pressurized fluid as measured by the flow measurement device within pre-determined limits.

Applicants' invention, as set forth in Claim 1, is not anticipated or render obvious by the prior art including but not limited to Carson. Carson, at best, merely discloses a control system that attempts to balance the flow of a single feed stream between two parallel circuits. More specifically, Carson provides a method and system for controlling the division of a feed stream between two heat exchangers operated in parallel that allegedly decreases the problems caused by failure of one heat exchanger. (See Carson, col. 1, lines 10 to 15) Accordingly, the flow measurement devices in Carson (which essentially comprise flow sensors 6 and 11) are *specifically and intentionally positioned in the individual parallel circuits downstream of the 3-way valve 2 that splits the main feed stream into its two component parts.* (See Carson, Figure 1) In other words, Carson expressly teaches the exact opposite of Applicants' invention as the flow control device of Carson (i.e., the 3-way valve 2) is connected to the conduit system *upstream* of

the flow measurement devices 6 and 11. For this reason alone, Carson cannot possibly anticipate Applicants' invention. Further, there is no teaching or suggestion for modifying Carson to satisfy the claimed invention. Applicants respectfully submit that one of ordinary skill in the art would not modify Carson in such a manner as to render the clear and unequivocal design objective of Carson, i.e., measure the flow through the individual parallel circuits, unfulfilled. Specifically, modifying Carson by placing the sensors 6 and 11 downstream of the 3-way valve 2 would prevent Carson from measuring the flow of the individual parallel circuits.

Claims 2 through 7 depend from Claim 1 and, therefore, are allowable for at least the reasons that Claim 1 is allowable.

Applicants' invention, as recited in Claim 10, is directed to an apparatus to control the rate of flow of pressurized fluid through a conduit connected to a pump. The apparatus includes a flow measurement device and an adjustable flow control device. The adjustable flow control device is operatively connected to the conduit *downstream* of the flow measurement device. As explained in connection with Claim 1, the prior art of record does not teach or suggest locating a flow control device downstream of a flow measurement device. Notably, Carson teaches the exact opposite, i.e., valve 2 is located *upstream* of sensors 6 and 11. (See Carson, Figure 1)

Claims 11 through 18 depend from Claim 10 and, therefore, are allowable for at least the reasons Claim 10 is allowable.

Applicants' invention, as set forth in Claim 21, is directed to a method of controlling the rate of flow of a stream of pressurized fluid through a conduit. The method includes the steps of:

- (i) determining the rate of flow of fluid through a portion of the conduit and generating a signal

proportionate to the fluid flow rate; (ii) directing the signal to a controller operatively connected to a flow control device, the flow control device operatively connected to the conduit *downstream of the portion of the conduit* and including an adjustable orifice wherein upon the opening of the orifice a portion of the stream of pressurized fluid is independently released from the conduit by the flow control device; and, (iii) with the controller, comparing the signal to a pre-determined value and activating the flow control device to open or close the adjustable orifice as necessary to maintain the flow of pressurized fluid as measured by the flow measurement device within pre-determined limits.

The prior art does not teach or suggest, among other features, a flow control device operatively connected to the conduit downstream of the portion of the conduit in which the rate of the flow of fluid is determined. On the contrary, Carson teaches the exact opposite by positioning the valve 2 upstream of the portion of the conduits in which sensors 6 and 11 determine the flow rate. As such, Carson cannot possibly anticipate Claim 21.

Claims 22 through 24 depend from Claim 21 and, therefore, are allowable for at least the reasons Claim 21 is allowable.

Applicants' invention, as set forth in Claim 25, is directed to a method to control the rate of flow of pressurized fluid through a conduit connected to a pump. The method permits the discharge of the fluid from the conduit at a rate below the output rate of the pump. The method includes the steps of: (i) with a flow measurement device determining the rate of flow of fluid through a portion of the conduit and generating a signal proportionate to the fluid flow rate; and, (ii) comparing the generated signal to a pre-determined value and activating an adjustable flow control device operatively connected to the conduit, *downstream of the portion of the*

conduit, to permit a portion of the pressurized fluid to be independently released from the conduit to maintain the flow of pressurized fluid as measured by the flow measurement device within pre-determined limits.

The prior art does not teach or suggest, among other features, activating an adjustable flow control device operatively connected to the conduit, *downstream of the portion of the conduit* in which the rate of the flow of fluid is determined. Rather, Carson teaches the exact opposite by positioning the valve 2 upstream of the portion of the conduits in which sensors 6 and 11 determine the flow rate. Hence, Carson does not anticipate or render obvious Claim 25.

Claim 26 depends from Claim 25 and, hence, is allowable for at least the reasons that Claim 25 is allowable.

Applicants respectfully submit that the subject patent application is in condition for allowance. Accordingly, Applicants respectfully request that the subject patent application be passed to issuance without delay.

It is believed that no fees are due. However, should that determination be incorrect, the Commissioner is hereby authorized to charge any deficiencies to Deposit Account No. 50-0562 and notify the undersigned in due course.

Date:

11/30/05

Respectfully submitted,



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